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EXAMINER

NGUYEN, TOAN D

ART UNIT

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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/761,767	Applicant(s) ORMOND, JOHN	
	Examiner TOAN D. NGUYEN	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/21/04;5/7/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Gunaseelan et al. (US 2002/0097750).

For claim 1, Karpoff discloses method and system for providing multimedia information on demand over wide area network, the method comprising:

successively joining data packets from the time sequence into the frames (col. 12, lines 5-10), which includes:

(a) transmitting each frame in a first set of the frames upon filling said each frame in the first set of frames with data from one or more of the data packets so that said each frame in the first set of frames cannot contain an additional data packet (col. 12, lines 7-10); and

(b) transmitting each frame in a second set of the frames which are not filled with at least some of the data packets so that said each frame in the second set of the frames cannot contain an additional data packet in order to ensure (col. 12, lines 7-10).

However, Karpoff does not expressly disclose transmitting each data packet in at least one of the frames no later than a certain time interval after the respective time of said each data packet in the time sequence, and in order to ensure that said each data

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packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence. In an analogous art, Gunaseelan et al. disclose transmitting each data packet in at least one of the frames no later than a certain time interval after the respective time of said each data packet in the time sequence (figure 4, page 2, paragraph [0026], lines 16-18), and in order to ensure that said each data packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence (figure 5, page 2, paragraph [0026], lines 21-22).

One skilled in the art would have recognized the transmitting each data packet in at least one of the frames no later than a certain time interval after the respective time of said each data packet in the time sequence, and in order to ensure that said each data packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence, and would have applied Gunaseelan et al.'s server 102 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Gunaseelan et al.'s system, server, and method for variable bit rate multimedia streaming in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide on time delivery (page 2, paragraph [0026], lines 16-18).

3. Claims 2-4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Gunaseelan et al. (US 2002/0097750) further in view of Houloheris et al. (US 5,915,094).

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For claims 2-4 and 11, Karpoff discloses wherein a main routine for processing said each data packet initiates the transmitting of each frame in the first set of the frames upon filling said each frame in the first set of frames with data from one or more of the data packets so that said each frame in the first set of frames cannot, contain an additional data packet (col. 12, lines 7-10).

However, Karpoff does not expressly disclose said each data packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence. In an analogous art, Gunaseelan et al. disclose said each data packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence (figures 4 and 5, page 2, paragraph [0026], lines 16-22).

One skilled in the art would have recognized the said each data packet is transmitted in at least one of the frames no later than the certain time interval after the respective time of said each data packet in the time sequence, and would have applied Gunaseelan et al.'s server 102 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Gunaseelan et al.'s system, server, and method for variable bit rate multimedia streaming in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide on time delivery (page 2, paragraph [0026], lines 16-18).

Furthermore, Karpoff in view of Gunaseelan et al. does not expressly disclose a timer interrupt routine. In an analogous art, Houloheris et al. disclose a timer interrupt

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routine (col. 10, line 30). Houloheris et al. disclose wherein the data packets include read I/O request data packets and write I/O request data packets, and the method includes separately joining the read I/O request data packets together for transmission, and separately joining the write I/O request data packets together for transmission, so that the I/O request data packets have an ordering in the frames that is different from the ordering of the I/O request data packets in the time sequence (col. 9, lines 28-31 as set forth in claim 3); wherein some of the read I/O request data packets are moved in front of some of the write I/O request data packets in some of the frames (col. 17, line 3 as set forth in claim 4); transmitting the frames over a data network, measuring loading on the data network, and dynamically adjusting the duration of the certain time interval based on the measured loading of the data network, the duration of the certain time interval being increased for increased loading on the data network (col. 14, lines 23-24 as set forth in claim 11).

One skilled in the art would have recognized the timer interrupt routine, and would have applied Houloheris et al.'s timer 280 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Houloheris et al.'s disk access method for delivering multimedia and video information on demand over wide area networks in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to define fixed interval network (col. 10, line 31).

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4. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Gunaseelan et al. (US 2002/0097750) further in view of Madukkarumukumana et al. (US 2005/0030972).

For claims 5-10, Karpoff in view of Gunaseelan et al. does not expressly disclose wherein the data packets are I/O request data packets, and the method includes on-line transaction processing applications in a host processor producing the data packets, and a TCP/IP interface in the host processor transmitting the frames over an IP network to network attached storage containing a database accessed by the on-line transaction processing applications. In an analogous art, Madukkarumukumana et al. disclose wherein the data packets are I/O request data packets, and the method includes on-line transaction processing applications in a host processor producing the data packets, and a TCP/IP interface in the host processor transmitting the frames over an IP network to network attached storage containing a database accessed by the on-line transaction processing applications (figure 1, page 1, paragraph [0015], lines 1-17, and paragraph [0016], lines 17-20).

Madukkarumukumana et al. disclose wherein the data packets are I/O replies from network attached storage, and the frames are transmitted to a host processor accessing the network attached storage (figure 1, page 1, paragraph [0015], lines 1-17 as set forth in claim 6); wherein the data packets are stored in a range of addresses of memory, a certain number of frames are preallocated in another region of memory, and the data packets are joined by transfer of the data packets from the range of addresses in memory to the preallocated frames in memory (page 3, paragraph [0028]

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as set forth in claim 7); wherein the certain number of preallocated frames are periodically updated (page 3, paragraph [0028] as set forth in claim 8); which includes application threads loading the data packets into the memory at the range of addresses in memory (page 3, paragraph [0028] as set forth in claim 9); which includes TCP/IP threads accessing the pool of preallocated frames for transmission of the preallocated frames including the data packets over an IP network (page 1, paragraph [0017] as set forth in claim 10).

One skilled in the art would have recognized the wherein the data packets are I/O request data packets, and the method includes on-line transaction processing applications in a host processor producing the data packets, and a TCP/IP interface in the host processor transmitting the frames over an IP network to network attached storage containing a database accessed by the on-line transaction processing applications, and would have applied Madukkarumukumana et al.'s host system 100 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Madukkarumukumana et al.'s method, system, and article of manufacture for utilizing host memory from an offload adapter in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to send and receive packets over the network 104 (page 1, paragraph [0015], lines 5-6).

5. Claims 12, 15-20, 24, 27-34 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Houloheris et al. (US 5,915,094).

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For claims 12 and 15-20, Karpoff discloses method and system for providing multimedia information on demand over wide area network, the method comprising the host processor joining data packets from different ones of the on-line transaction processing applications in the same network transmission frames to more completely fill the network transmission frames (col. 12, lines 5-10).

However, Karpoff does not expressly disclose I/O request data packets. In an analogous art, Houloheris et al. disclose I/O request data packets (col. 20, line 49).

Houloheris et al. disclose which includes the host processor executing a periodic timer interrupt routine to insure that each I/O request data packet is transmitted in a frame no later than a certain time interval after said each I/O request data packet is produced by one of the on-line transaction processing applications (col. 10, line 30 as set forth in claim 15); wherein the I/O request data packets include read I/O request data packets and write I/O request data packets, and the method includes separately joining the read I/O request data packets together for transmission to the network block storage, and separately joining the write I/O request data packets together for transmission to the network block storage (col. 17, line 3 as set forth in claim 16); which includes moving some of the read I/O request data packets in front of some of the write I/O request data packets in some of the frames (col. 17, line 3 as set forth in claim 17); which includes turning on and off the joining of the I/O request data packets (col. 17, line 3 as set forth in claim 18); wherein the joining of the I/O request data packets is turned off during a bulk transfer of database data (col. 17, line 3 as set forth in claim 19); which includes the host processor executing an I/O request bunching routine that

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intercepts I/O request data packets sent from the on-line transaction processing applications to a network block storage interface (col. 20, lines 49-51 as set forth in claim 20).

One skilled in the art would have recognized the I/O request data packets, and would have applied Houloheris et al.'s network packets in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Houloheris et al.'s disk access method for delivering multimedia and video information on demand over wide area networks in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide for all packets of the same I/O request (col. 20, line 49).

For claims 24 and 32-33, Karpoff discloses method and system for providing multimedia information on demand over wide area network, the method comprising a host processor programmed for executing on-line transaction processing applications and having a network block storage interface for accessing network attached storage coupled to the host processor via a data network, the performance problem being caused by network transmission frames being only partially filled data packets from the on-line transaction processing applications, the performance problem being solved by re-programming the host processor to join the I/O request data packets from different ones of the on-line transaction processing applications in the same network transmission frames to more completely fill the network transmission frames (col. 12, lines 5-10).

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However, Karpoff does not expressly disclose I/O request data packets. In an analogous art, Houloheris et al. disclose I/O request data packets (col. 20, line 49). Houloheris et al. disclose wherein the host processor is re-programmed by modifying programming in the network block storage interface that packs the frames with the I/O request data packets (col. 20, line 49 as set forth in claim 32); which includes re-programming the network attached storage to bunch I/O replies into frames for transmission from the network attached storage over the data network to the host processor (col. 20, line 49 as set forth in claim 33).

One skilled in the art would have recognized the I/O request data packets, and would have applied Houloheris et al.'s network packets in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Houloheris et al.'s disk access method for delivering multimedia and video information on demand over wide area networks in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide for all packets of the same I/O request (col. 20, line 49).

For claim 27, the claim is directed to the same subject matter in claim 15. Therefore, it is subjected to the same rejection.

For claim 28, the claim is directed to the same subject matter in claim 16. Therefore, it is subjected to the same rejection.

For claim 29, the claim is directed to the same subject matter in claim 17. Therefore, it is subjected to the same rejection.

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For claim 30, the claim is directed to the same subject matter in claim 18.

Therefore, it is subjected to the same rejection.

For claim 31, the claim is directed to the same subject matter in claim 20.

Therefore, it is subjected to the same rejection.

For claim 34, Karpoff discloses method and system for providing multimedia information on demand over wide area network, the method comprising the host processor being programmed for joining the I/O request data packets from different ones of the on-line transaction processing applications into the same network transmission frames to more completely fill the network transmission frames (col. 12, lines 5-10).

However, Karpoff does not expressly disclose I/O request data packets. In an analogous art, Houloheris et al. disclose I/O request data packets (col. 20, line 49).

One skilled in the art would have recognized the I/O request data packets, and would have applied Houloheris et al.'s network packets in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Houloheris et al.'s disk access method for delivering multimedia and video information on demand over wide area networks in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide for all packets of the same I/O request (col. 20, line 49).

For claim 37, the claim is directed to the same subject matter in claim 15.

Therefore, it is subjected to the same rejection.

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For claim 38, the claim is directed to the same subject matter in claim 16.

Therefore, it is subjected to the same rejection.

For claim 39, the claim is directed to the same subject matter in claim 17.

Therefore, it is subjected to the same rejection.

For claim 40, the claim is directed to the same subject matter in claim 18.

Therefore, it is subjected to the same rejection.

For claim 41, the claim is directed to the same subject matter in claim 20.

Therefore, it is subjected to the same rejection.

6. Claims 13-14, 25-26 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Houloheris et al. (US 5,915,094) further in view of Gunaseelan et al. (US 2002/0097750).

For claim 13, Karpoff in view of Houloheris et al. do not expressly disclose which includes the host processor transmitting each I/O request data packet in a frame no later than a certain time interval after said each I/O request data packet is produced by one of the on-line transaction processing applications. In an analogous art, Gunaseelan et al. disclose which includes the host processor transmitting each I/O request data packet in a frame no later than a certain time interval after said each I/O request data packet is produced by one of the on-line transaction processing applications (figure 5, page 2, paragraph [0026], lines 21-22).

One skilled in the art would have recognized the which includes the host processor transmitting each I/O request data packet in a frame no later than a certain time interval after said each I/O request data packet is produced by one of the on-line

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transaction processing applications, and would have applied Gunaseelan et al.'s server 102 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Gunaseelan et al.'s system, server, and method for variable bit rate multimedia streaming in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to provide on time delivery (page 2, paragraph [0026], lines 16-18).

For claim 14, Houloheris et al. in view of Karpoff which includes the host processor dynamically adjusting the certain time interval in response to loading on the data network, the certain time interval being increased for increased loading on the data network (col. 14, lines 23-24).

For claim 25, the claim is directed to the same subject matter in claim 13. Therefore, it is subjected to the same rejection.

For claim 26, the claim is directed to the same subject matter in claim 14. Therefore, it is subjected to the same rejection.

For claim 35, the claim is directed to the same subject matter in claim 13. Therefore, it is subjected to the same rejection.

For claim 36, the claim is directed to the same subject matter in claim 14. Therefore, it is subjected to the same rejection.

7. Claims 21-23 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karpoff (US 7,299,290) in view of Houloheris et al. (US 5,915,094) further in view of Madukkarumukumana et al. (US 2005/0030972).

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For claim 21, Karpoff in view of Houloheris et al. does not expressly disclose which includes storing the I/O request data packets in a range of addresses of memory, preallocating a certain number of frames in another region of memory, and joining the data packets during transfer of the data packets from the range of addresses in memory to the preallocated frames in memory. In an analogous art, Madukkarumukumana et al. disclose which includes storing the I/O request data packets in a range of addresses of memory, preallocating a certain number of frames in another region of memory, and joining the data packets during transfer of the data packets from the range of addresses in memory to the preallocated frames in memory (page 3, paragraph [0028]).

Madukkarumukumana et al. disclose which includes periodically updating the certain number of preallocated frames (page 3, paragraph [0028] as set forth in claim 22); which includes the network attached storage bunching I/O replies into frames for transmission from the network attached storage over the data network to the host processor (figure 1, page 1, paragraph [0015], lines 1-17, and paragraph [0016], lines 17-20 as set forth in claim 23).

One skilled in the art would have recognized the which includes storing the I/O request data packets in a range of addresses of memory, preallocating a certain number of frames in another region of memory, and joining the data packets during transfer of the data packets from the range of addresses in memory to the preallocated frames in memory, and would have applied Madukkarumukumana et al.'s host system 100 in Karpoff's server 12. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Madukkarumukumana et al.'s method,

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system, and article of manufacture for utilizing host memory from an offload adapter in Karpoff's method and system for providing multimedia information on demand over wide area network with the motivation being to send and receive packets over the network 104 (page 1, paragraph [0015], lines 5-6).

For claim 42, the claim is directed to the same subject matter in claim 21.

Therefore, it is subjected to the same rejection.

For claim 43, the claim is directed to the same subject matter in claim 22.

Therefore, it is subjected to the same rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN D. NGUYEN whose telephone number is (571)272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/T. D. N./

Examiner, Art Unit 2616

/FIRMIN BACKER/

Supervisory Patent Examiner, Art Unit 2616